第61回シグナル伝達医学 グローバルCOE学術講演会

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場所：外来診療棟6F　大講義室

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Regulatory T cells induced by ultraviolet radiation. Facts and perspectives

<Abstract>
Among the many biological effects exerted by ultraviolet radiation (UVR) UVR-induced immunosuppression is one of the least understood. UVR-induced immunosuppression differs from drug-induced immunosuppression in several ways. It is induced by low doses of UVR, it causes long-term suppression, it is antigen-specific and it affects primarily T-cell driven immune reactions. The antigen-specificity is due to regulatory T cells (Treg). These are induced by UVR-damaged Langerhans cells which migrate into the lymph nodes, present the antigen in a non-professional fashion and thereby induce Treg. Due to the expression of CD62L UVR-Treg locate to the lymph nodes and thus primarily inhibit sensitization. Since they act in an antigen-specific fashion they harbor therapeutic potential, but in this case they should not only prevent sensitization but also inhibit elicitation. Recently we identified strategies by which the migratory behavior of UVR-Treg can be modified in such a way that they migrate into the periphery and thus inhibit the elicitation of immune responses. We recently observed that the murine antimicrobial peptide mBD14 induces Treg as well. This gives rise to the speculation that mBD-14 may protect the host from microbial attacks on the one hand, but tame T-cell-driven reactions on the other hand, thereby enabling an antimicrobial defense without collateral damage by the adaptive immune system. Topical application of vitamin D has been identified as another route to induce Treg. Whereas mBD14 may directly affect T cells shifting them into a regulatory phenotype, vitamin D as UVR appears to act primarily via antigen presenting cells. Further characterization of Treg and the routes by which they can be induced will help to identify strategies to utilize these cells in a therapeutic setting.

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